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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,171	09/28/2001	Katsuyuki Yamada	65988 CCD	5507

7590 04/16/2004

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EXAMINER	
ANGEBRANNDT, MARTIN J	

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,171	YAMADA ET AL.	
	Examiner	Art Unit	
	Martin J Angebranndt	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *15 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 17-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) *1-32* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6,7,8,9*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The restriction requirement of 11/26/2003 is incorporated by reference here and the restriction is made final.

2. Applicant's election without traverse of group I, claims 1-14 and 17-32 in Paper No. 11 is acknowledged.

3. The examiner would like to point out that it has been held in the courts that the "applicant has [an] obligation to call the most pertinent prior patent to [the] attention of [the] Patent Office in a proper fashion." [Penn Yan Boats, Inc. V. Sea Lark Boats, Inc., et al. 175 USPQ 260 (DC SFla 1972)]. The examiner would appreciate the applicant identifying why the cited reference is pertinent including relevant portions of the document cited. The applicant has cited approximately 100 references.

The portions of the applications cited on the PTO-1449 have been considered, but are crossed out to prevent disclosure.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-14 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim should indicate that the deposition is a sputter deposition and that the heating is from the deposition process. See [0218] in prepub.

Claim 1 should indicate that the information is embossed into the medium as otherwise it could be inadvertently erased. See [0161] in prepub.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 17-25 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ide et al. EP 735158.

Examples have a polycarbonate substrate, 200 nm ZnO-SiO_2 layer, a 25 nm recording layer, a 30 nm ZnO-SiO_2 layer, a 100 nm reflective layer and a protective layer. The compositions of examples 5 and 7 shown in table 1 are similar to the compositions of example 51 and 54 of the instant specification. The addition of various materials including B,N,C,P,Si, O,S, Se, Al, Ti, V, Mn, Fe, Co, Ni, Cu, Zn, Ga, Sn, Pd, Pt and Au as impurities to improve the performance and the reliability of the recording layer is disclosed. (7/1-57).

9. Claims 17-25 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. EP 1058249.

Examples have a polycarbonate substrate, 50-110 nm ZnS-SiO_2 layer, a 15-20 nm recording layer, a 25-30 nm ZnS-SiO_2 layer, a 120+ nm reflective layer and a protective layer. The compositions of examples 4 shown in table 1 is similar to the compositions of example 54 of the instant specification. The addition of various materials including B,N,C,Si,Ge and Sn as impurities in amounts of up to 5% to improve the performance and the reliability of the recording layer is disclosed. [0046]. Also note examples 6-8 which use Ge, C and N as impurities.

10. Claims 17-26 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. EP 1280142.

Example 1 has a polycarbonate substrate, 80 nm ZnS-SiO_2 layer, a 16 nm recording $Ag_{0.5}Ge_{1.5}In_8Sb_{70}Te_{20}$ layer, a 11 nm ZnS-SiO_2 layer, a 100 nm reflective layer and a protective layer which is similar to the compositions of table 1 of the instant specification, specifically example 10. The addition of various materials including Bi,Ga,Ge,Ag, In, N,C,O,S and Si as impurities in amounts of 0.1-15% to improve the performance and the reliability of the recording layer is disclosed. [0062-0064]. These are disclosed as having a NaCl structure.[0065]. Example 2 of the reference discloses $Ga_5Ge_2Sb_{73}Te_{20}$. The use of Te in amounts of 20-60% is disclosed [0061].

In the analysis of the instant specification with respect to claim 26, the substrate temperature starts at room temperature and there is no heating element or controller described. The examiner is of the opinion that the language of the claims describes the heating caused by the sputter deposition process. As the crystal structure of the reference is the same as that disclosed, the thermal conditions must have been the same during its formation. The examiner holds that during the formation of the layer described, the examiner notes that the applicant

Kasuyuki YAMADA is listed as an inventor on the patent cited and is therefore in a position to have direct knowledge and may wish to make a declaration concerning the conditions used in Yamada et al. EP 1280142

11. Claims 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. EP 1280142.

It would have been obvious to one skilled in the art to modify the composition of examples 1 or 2 of Yamada et al. EP 1280142 to form $Ga_5Ge_2Sb_{60-75}Te_{40-25}$ alone or with additives such as Bi, In, Ag, N, C, O, S and/or Si based upon the disclosure at [0061-0064] with a reasonable expectation of still forming a NaCl structure based upon the disclosure.

The limitations of claims 31 and 32 are held to be intended use limitations describing the response of the medium to particular pertubation (PWM recording system).

12. Claims 17-25 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. JP 11-115313.

Examples 10 and 11 have a polycarbonate substrate, 70-80 nm ZnS-SiO_2 layer, a 20-25 nm recording $Ag_1In_6Sb_{63-65}Te_{23}N_{2-5}$ layer, a 25 nm ZnS-SiO_2 layer, a 120-140 nm reflective layer and a protective layer which is similar to the compositions of table 3 of the instant specification, specifically examples 21 and 22. The addition of various materials including Bi,Ga,Ge,Ag, In, N,C,O,S and Si as impurities in amounts of 0.1-15% to improve the performance and the reliability of the recording layer is disclosed. [0062-0064].

13. Claims 27-32 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. JP 11-115313.

Example 3 has a polycarbonate substrate, 103 nm ZnS-SiO_2 layer, a 16 nm recording $Ag_{4.7}Ga_{4.7}Ge_{4.6}Sb_{61.3}Te_{24.7}$ layer, a 41 nm ZnS-SiO_2 layer, a 200 nm reflective layer and a protective layer which is embraced by the language of claim 27. [0042]. Note Ag is considered an impurity.

14. Claims 27 and 29-32 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Nobukuni et al. EP 1056077.

Example 3 has a polycarbonate substrate, 100 nm ZnS-SiO_2 layer, a 20 nm recording $Ga_5Ge_5Sb_{68}Te_{22}$ layer, a 40 nm ZnS-SiO_2 layer, a 250 nm reflective layer and a protective layer which is embraced by the language of claim 27. [0464]. The addition of various materials including In, Ga, Si, Sn, Pb, Pd, Pt, Zn, Au, Ag, Zr, Hf, V, Nb, Ta, Cr, Co, Bi, N,O,S and rare earths as impurities to improve the performance and the reliability of the recording layer is disclosed [0073-0074].

15. Claims 17-25 and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobukuni et al. EP 1056077.

It would have been obvious to one skilled in the art to modify the composition of embodiment 9 of Nobukuni et al. EP 1056077 by adding other elements such as Bi, In, Ag, N,O,Si .... based upon the disclosure at [0073-0074] with a reasonable expectation of still forming useful optical recording medium, with improvement is the properties.

The limitations of claims 31 and 32 are held to be intended use limitations describing the response of the medium to particular pertubation (PWM recording system).

16. Claim 26 is rejected under 35 U.S.C. 102(b) as being fully anticipated by Yuzurihara et al. '176.

See example 10, which was formed using a sputtering power of 300 W with a argon flow of 0.5 sccm, which is similar to the conditions used in example 51 of the instant specification.

In the analysis of the instant specification with respect to claim 26, the substrate temperature starts at room temperature and there is no heating element or controller described. The examiner is of the opinion that the language of the claims describes the heating caused by the sputter deposition process.

17. Claim 26 is rejected under 35 U.S.C. 102(b) as being fully anticipated by Kosuda et al. '330.

See example, which was formed using a sputtering power of 200 W with a pressure of 0.3 Pa, which is similar to the conditions used in example 51 of the instant specification.

In the analysis of the instant specification with respect to claim 26, the substrate temperature starts at room temperature and there is no heating element or controller described. The examiner is of the opinion that the language of the claims describes the heating caused by the sputter deposition process.

18. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. '543.

Ando et al. '543 disclose phase change optical recording media (RAM) (8/53-58). The lead-in area is disclosed as containing embossed information including linear velocity upon recording and erasure. (10/60-64)

It would have been obvious to include the linear velocity for recording information in the lead in area of the optical disc described in column 8 as this is considered conventional to provide this information to the readout/recording system.

19. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisotomi et al. WO 99/38168.

Hisotomi et al. WO 99/38168 disclose GeTeSb phase change optical recording media (RAM) (page 6). The lead-in area is disclosed as containing embossed information including linear velocity upon recording and erasure. (paragraph bridging pages 7-8)

It would have been obvious to include the linear velocity for recording information in the lead in area of the optical disc described in column 8 as this is considered conventional to provide this information to the readout/recording system.

20. Claims 1-14 and 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. EP 1280142, in view of Ando et al. '543 or Hisotomi et al. WO 99/38168.

It would have been obvious to one skilled in the art to modify the teachings/medium of Yamada et al. EP 1280142 by embossing information concerning the linear velocities that the medium should be used at as taught by Ando et al. '543 or Hisotomi et al. WO 99/38168 to enable the recording system to use the medium properly with a reasonable expectation of success.

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tominaga et al. '012 teaches the heating of AgSbTeIn recording layers to initialize them (1/58-2/8)

Utsumi et al. '746 teach heating during deposition to obviate the need for later initialization.

Nishimura JP 06-330308 teaches cooling the substrate to prevent heating during deposition.

Hisatomi et al. '152 is the US equivalent of WO 99/38168 (5/49-6/11 and 4/53-62).

Inoue et al. JP 2000-067435 teaches recording at the maximum linear velocity.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Martin J Angebranndt
Primary Examiner
Art Unit 1756

04/13/2004